



IMPACT FACTOR:3.021

PP:125to131

## Technical analysis of IT sector

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### Abstract:

*There are different branches of analysis which can help investors organize the vast amount of information that is available when making investment decisions. **Fundamental analysis and Technical analysis** have different ways to answer the question of how to examine the value of the stock. Technical analysts believe that all the information they need about a stock can be found in its price and volume charts. Technical analysis is the process that uses charts and other tools to identify patterns to predict price trends in the future. In the study three companies of IT industry have been selected namely Infosys, Wipro and Tcs. For the purpose of the technical analysis, techniques like 100 days Moving averages and 200 days moving averages are used for the analysis.*

**Keywords:** Fundamental analysis, Technical analysis, Moving averages, 100 days Moving averages and 200 days moving averages.

### Introduction:

Technical analysis is mainly concerned with the study of historical past price movements of the stocks and on its volume of trade in the market to predict the future behavior of the stocks however it does not consider any fundamental factors of the company like earnings, growth rates, dividends, financial ratios etc. The rationale behind technical analysis is that the share price behavior repeats itself over a time and technical analysts attempt to derive methods to predict these repetitions. The basic concept behind technical analysis is that prices move in trends or waves, which may be upward or downward and the present trends are influenced by past trends and the projection of future trends is possible by an analysis of past price trends.

Hence technical analysts use this trend as an important tool for security analysis and mainly concentrate on trend movements. Technical analysis is applicable to all stocks, commodities, future or for any other tradable instruments where the prices are influenced by the forces of demand and supply. Price refers to any combination of the open, high, low, close for a given security over a specific period. The period can be based on daily, weekly or monthly price data and last a few hours or many years.

### **Components of Technical Analysis**

There are numerous components for doing technical analysis. Basically this analysis is done from the following four important points of view:-

- Charts
- Trend
- Support and Resistance
- Indicators

### **Objective of The study:**

- To know how technical tools are used to predict the future behavior of the stocks.
- To know how charting techniques are useful to take buy or sell decision.
- To understand the movement and performance of stocks to take decision to invest.

### **Literature Review:**

A paper by Wing Keung Wong, Meher Manzer and Boon Kiat Chew<sup>4</sup> from department of economics, National university of Singapore has examined the role of technical analysis in the timing of stock market entry and exits. They used two technical indicators which are moving average and relative strength index. They used the daily close of the Singapore STII for the period from 1 January 1974 to 31 December 1994. They divided the full sample into 3 sub-periods of 7 years each. The result showed that technical indicators play a useful role in the timing of stock market entry and exits. By applying technical indicators, member firms of the SES (stock exchange of Singapore) may enjoy substantial profit. Moreover the result indicated that the single moving averages produce the best results.

Another study by Hemanth has examined different sector stocks by using technical analysis. He used Moving average method and RSI and selected five index of nifty of different industrial sectors. The study finds that technical analysis useful for short term approach to analyze the market and Moving average and RSI are the leading oscillators in technical analysis.

R.chitra (2011) assessed technical analysis of selected stock of energy sector. The study based on secondary data. It collected from website, magazine and journals. She used daily

share price movement of selected companies from 2007 to 2010. for the analysis purpose she used technique like Beta, Relative strength index and simple moving average. The study finds technical analysis gives them right direction to go on further to buy or sell the stocks. The study suggests the small investor and traders should not blindly make an investment rather than they should analyze using various tools to check if the scrip is technically strong.

### **Hypothesis:**

Ho: There is no significant difference in average return of 100 days moving average and 200 days moving average of selected companies

H<sub>1</sub>: There is significant difference in average return of 100 days moving average and 200 days moving average of selected companies.

### **Moving Average**

The Moving Average Technical Indicator shows the mean instrument price value for a certain period of time. When one calculates the moving average, one averages out the instrument price for this time period. As the price changes, its moving average either increases, or decreases.

There are four different types of moving averages: Simple, Exponential, Smoothed and Linear Weighted. Moving averages may be calculated for any sequential data set, including opening and closing prices, highest and lowest prices, trading volume or any other indicators. It is often the case when double moving averages are used. The only thing where moving averages of different types diverge considerably from each other is when weight coefficients, which are assigned to the latest data, are different. In case we are talking of simple moving average, all prices of the time period in question are equal in value. Exponential and Linear Weighted Moving Averages attach more value to the latest prices. The most common way to interpreting the price moving average is to compare its dynamics to the price action. When the instrument price rises above its moving average, a buy signal appears, if the price falls below its moving average, what we have is a sell signal. The trading system, which is based on the moving average, is not designed to provide entrance into the market right in its lowest point, and its exit right on the peak. It allows acting according to the following trend: to buy soon after the prices reach the bottom, and to sell soon after the prices have reached their peak.

### **Types of Moving Averages**

There are a number of different types of moving averages that vary in the way they are calculated, but how each average is interpreted remains the same. The calculations only differ in regards to the weighting that they place on the price data, shifting from equal weighting of each price point to more weight being placed on recent data. The three most common types of moving averages are simple, linear and exponential.

## **Simple Moving Average (SMA)**

This is the most common method used to calculate the moving average of prices. It simply takes the sum of all of the past closing prices over the time period and divides the result by the number of prices used in the calculation. For example, in a 10-day moving average, the last 10 closing prices are added together and then divided by 10. As you can see in Figure 1, a trader is able to make the average less responsive to changing prices by increasing the number of periods used in the calculation. Increasing the number of time periods in the calculation is one of the best ways to gauge the strength of the long-term trend and the likelihood that it will reverse

## **Linear Weighted Average**

This moving average indicator is the least common out of the three and is used to address the problem of the equal weighting. The linear weighted moving average is calculated by taking the sum of all the closing prices over a certain time period and multiplying them by the position of the data point and then dividing by the sum of the number of periods. For example, in a five-day linear weighted average, today's closing price is multiplied by five; yesterday's by four and so on until the first day in the period range is reached. These numbers are then added together and divided by the sum of the multipliers.

## **Exponential Moving Average (EMA)**

This moving average calculation uses a smoothing factor to place a higher weight on recent data points and is regarded as much more efficient than the linear weighted average. Having an understanding of the calculation is not generally required for most traders because most charting packages do the calculation for you. The most important thing to remember about the exponential moving average is that it is more responsive to new information relative to the simple moving average. This responsiveness is one of the key factors of why this is the moving average of choice among many technical traders.

## **The 200-Day Moving Average**

One of the most reliable and easily read technical indicators available to investors is the 200-day moving average of a security. The technique for computing the average is simple. The closing prices of the stock market observation are added up for the most recent 200 days it has been traded. This sum is divided by 200. The objective is to obtain a relatively simple and smooth curve for the issue.

## **Technical analysis of selected company (moving average)**

In the study 100 days moving average & 200 days moving averages have been used for technical analysis. For the statistical analysis anova table has been used.

Ho: There is no significant difference in average return of 100 days moving average and 200 days moving average of Infosys.

**Group Statistics**

Moving Average Of Infosys		N	Mean	Std. Deviation	Std. Error Mean
Return	100 Moving Average	66	16.44	129.951	15.996
	200 Moving Average	18	97.67	387.205	91.265

**Independent Samples Test**

**Table No : 2**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Return	Equal Variances Assumed	3.275	.075	-.311	65	.757	-22.487	72.304	-166.889	121.914
	Equal variances not assumed			-.248	24.003	.806	-22.487	90.519	-209.308	164.333

5% level of significance table value = 1.70

The hypothesis is to be test on 100 & 200 days moving averages of the companies at 'F' calculated value is 3.275 which is greater than the level of significance. it resulted the null hypothesis is rejected. And it is clear that there is significant difference in average return of 100 days moving average and 200 days moving average of Infosys.

Ho: There is no significant difference in average return of 100 days moving average and 200 days moving average of Tcs.

**Group Statistics**

**Table No:3**

Moving Average Of Tcs		N	Mean	Std. Deviation	Std. Error Mean
Return	100 Moving Average	66	16.44	129.951	15.996
	200 Moving Average	18	97.67	387.205	91.265

**Independent Samples Test**

**Table No : 4**

5% level of significance table value = 1.88.

The hypothesis is to be test on 100 & 200 days moving averages of the company at ‘F’ calculated value is 6.174 which is greater than the level of significance. it resulted the null hypothesis is rejected and it is clear that there is significant difference in average return of 100 days moving average and 200 days moving average of tcs.

Ho: There is no significant difference in average return of 100 days moving average and 200 days moving average of wipro.

**Group Statistics**

**Table no:5**

Moving Average Of Wipro		N	Mean	Std. Deviation	Std. Error Mean
Return	100 Moving Average	56	3.90	40.500	5.412
	200 Moving Average	54	-2.29	33.133	4.509

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Return	Equal variances assumed	6.174	.015	-1.449	82	.151	-81.234	56.074	-192.782	30.314
	Equal variances not assumed			-.877	18.056	.392	-81.234	92.656	-275.854	113.386

**Independent Samples Test**

**Table No:6**

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
RETURN	Equal variances assumed	.157	.693	.876	108	.383	6.191	7.070	-7.822	20.205
	Equal variances not assumed			.879	105.235	.381	6.191	7.044	-7.776	20.158

5% level of significance table value = 1.26

The hypothesis is to be test on 100 & 200 days moving averages of the company at 'F' calculated value is 0.157 which is less than the level of significance. it resulted the null hypothesis is accepted and it is clear that there is significant difference in average return of 100 days moving average and 200 days moving average of wipro.

## **Conclusion**

100 days moving average return is higher than 200 days moving average in Infosys. 200 days moving average return is higher than 100 days moving average in Tcs. 100 days moving average return is higher than 200 days moving average in Wipro but not that much difference therefore the tested hypothesis highlights that there is no significant difference in average return of 100 days moving average and 200 days moving average of Wipro.

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